Our View: Live by the Delta, Die by the Delta

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The complicated subject of options theory and real options is a topic seemingly beyond the intellectual capability of most economists, analysts, policymakers, and company executives, whose knowledge of economics apparently remains frozen around 1980. Options theory, not Middle Eastern events, explains the oil price collapse during the last week of October.

Oil prices declined from $95 per barrel on October 19 to $89 on October 27. The widespread explanation for the decrease was economic uncertainty and the absence of real developments in the Middle East.

In no case did any writer or commentator discussing the price decline mention the role played by options written on December Brent futures in the price fluctuations. These options expired on October 26.

However, Bloomberg did post an item on its terminals regarding the expiration of calls:

> The drop in Brent crude prices on Thursday is set to make almost 35 million barrels worth of options expire worthless.
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> Brent December $90 calls would have expired "in the money," and worth converting into a futures contract, at Wednesday's settlement price of $90.13 a barrel, but the early slide in futures has left them valueless.
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> Traders have piled into bullish options in recent weeks, particularly in the aftermath of the Hamas attack on Israel, to protect against the possibility of a widening Middle East conflict that could curtail supply.[1]

The Bloomberg authors did not explain how options hedging intensifies crude price fluctuations because the parties writing the options have to buy or sell more futures as the contract approaches expiration. That buying and selling heightens the price variations in the underlying futures contract, particularly if the number of options is large relative to the outstanding open interest in the futures contract. For the December Brent contract, the number of calls with a strike price above $80 per barrel exceeded the number of outstanding December futures contracts.

More than thirty-five thousand $90-per-barrel calls were outstanding on October 25. The call writers' computers could begin dumping futures as soon as the price dropped below $90. The selling put downward pressure on prices, promoting the sales of more futures.

Futures traders are aware of the opportunity to move prices on the days before options contracts expire. On many occasions, writers have commented on the efforts of some traders to buy futures,

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[1] *Alex Longley and Devika Krishna Kumar, "35 Million Barrels of Oil Options Worthless on Drop Below $90," Bloomberg, October 10, 2023.*

pushing more options “into” the money, while other traders try to sell futures to keep said options “out of the money.”

Last week saw significant price fluctuations that resulted from futures buying and selling to maintain delta neutrality and to profit by pushing futures into the money or driving them out of the money. During this period, it is doubtful that the IEA forecast issued at the beginning of the week or events in the Middle East moved markets at all. The movements occurred mostly in the ICE casino where the Brent contract was expiring.

The figure on our web page compares the movement of the December Brent Futures price with the delta for the $90 call option on the December future. One can observe that the price dropped sharply as the call fell out of the money.

It would pay for analysts to bone up on options theory.